

Rotorcraft Program Transfers Technology to Industry, DoD, Other NASA Programs



WORKSHOP PARTICIPANTS LISTEN TO JAMES ZAKRAJSEK OF GLENN RESEARCH CENTER DESCRIBING GRC EFFORTS IN ROTORCRAFT DRIVE SYSTEMS

As part of its planned phase-out, the Rotorcraft Base Program held a Technology Transition Workshop at Ames Research Center, California, on September 5 and 6, 2001. This activity attracted more than a dozen representatives from the Army, Navy, industry, universities, research organizations, and other NASA programs, interacting with an equal number of rotorcraft research managers.

Introducing the program, the program manager, Dr. John Coy, pointed out that the Rotorcraft Program represented an investment of more than \$100 million; the purpose of the workshop was to realize the maximum benefits from that investment by transitioning research results to production or to further development. Research managers from Ames, Langley, and Glenn research centers summarized key results of rotorcraft-funded projects, provided bibliographies listing 531 publications, and discussed potential transition actions. Participants then had the opportunity to meet with NASA managers and researchers to follow up on specific topics.

The presentations covered the four projects that comprise the Rotorcraft Program: RAPID, SILNT, SAFOR, and NRTC

Robert Kuhfeld, manager for the RAPID (Revolutionary Approaches the Produce Innovative Design Technologies) project, described efforts that defined innovative vertical lift

configurations such as advanced tiltrotor concepts, developed computational codes based on wind-tunnel validated physics-based models, examined tiltrotor aerodynamic and aeroacoustic phenomena, and fostered novel concepts for controlling noise and vibration.

Langley Rotorcraft Manager Michael Watts reported on rotorcraft-unique structures and aeroelastic work and efforts under the SILNT (Select Integrated Low-Noise Technologies) project to predict and control external noise—including demonstrated noise reductions exceeding 10 dB.

The SAFOR (Safe All-weather Flight Operations for Rotorcraft) project, managed and described by Laura Iseler, has emphasized accident prevention through improved flight control laws, pilot aiding to reduce workload, and training to enhance pilots' decision making in critical situations.

James Zakrajsek described activities at Glenn Research Center that have expanded knowledge about gear thermal management and damage phenomena, examined advanced concepts including applications of nanotube technology and variable speed drive systems, and reduced gear noise in rotorcraft transmissions.

NRTC (National Rotorcraft Technology Center) Project Manager Dr. Stephen Dunagan reported on NRTC accomplishments, including sustaining three universities as Rotorcraft Centers of Excellence and transitioning 62 technologies to rotorcraft currently in production or under development. This project is conducted jointly with the Army, Navy, FAA, universities, and the rotorcraft industry.

Participants expressed interest in a number of specific projects and databases, to be followed by discussions among the specialists involved. Dr. Coy thanked the participants for attending the workshop and for their support over the years, and he expressed his hope that many of the technologies would be pursued to a fruitful conclusion.